AMENDMENTS TO THE CLAIMS:

Please amend the claims as set out below:

1.-63. (Cancelled)

64. **(Currently Amended)** A process for producing a ~~long-term~~ culture of ~~immature~~ human ~~or mouse~~ dendritic cells, comprising:

~~(i)~~ culturing ~~an~~ **human** embryonic stem ~~cell~~ **cells** in the presence of **a** composition comprising **IL-3, wherein said culturing produces human dendritic cells.** ~~a cytokine, which bring about differentiation of said embryonic stem cell into an immature dendritic cell; and~~

~~(ii) recovering said immature dendritic cell from said culture,~~

65.-68. (Cancelled)

69. **(Currently Amended)** The process according to **claim 64** ~~claim 68~~, wherein said composition further comprises GM-CSF.

70. **(Currently Amended)** The process according to claim 64, wherein **the process comprises culturing the human embryonic stem cells to form embryoid bodies** ~~said embryonic stem cell in (i) is in the form of embryoid bodies~~.

71. **(Currently Amended)** The process according to claim 64, wherein said **human** embryonic stem **cells are** ~~cell (ES) is~~ genetically modified.

72. **(Currently Amended)** The process of ~~claim 71~~ **claim 64**, wherein the **human dendritic cells express** ~~cell expresses~~ one or more heterologous gene(s).

73. (Canceled)

74. **(Currently Amended)** The process of ~~claim 73~~ **claim 72**, wherein the **heterologous gene(s) encodes a cell surface** protein ~~is a cell surface receptor~~.

75. **(Currently Amended)** The process of ~~claim 74~~ **claim 72**, wherein the **heterologous gene(s) encodes** ~~protein is~~ Fas-ligand.

76. (Canceled)

77. **(Currently Amended)** The process of ~~claim 73~~ **claim 72**, wherein the **heterologous gene(s) encodes an antigen** ~~protein is an antigen target for the immune system, such as an autoantigen, a tumour antigen, or a foreign antigen~~.

78. **(Currently Amended)** The process of claim 64, wherein the **human dendritic cells co-express** ~~cell co-expresses~~ two or more heterologous genes.

79. (Canceled)

80. **(Currently Amended)** The process of ~~claim 79~~ **claim 72,** wherein the **heterologous gene(s)** ~~gene~~ is an anti-apoptotic gene.

81. **(Currently Amended)** The process of claim **72** ~~78 or 79~~, wherein the **heterologous gene(s)** ~~gene~~ encodes FLIP or bcl-2.

82. **(Currently Amended)** The process of claim 64, wherein one or more endogenous gene(s) ~~have~~ **has** been inactivated **in the human embryonic stem cells**.

83. **(Currently Amended)** The process of claim 82, wherein the inactivated endogenous gene(s) ~~are~~ **is** B7-1, IL-12, p35 subunit of IL-12 or p40 subunit of IL-12.

84. **(Currently Amended)** The process of claim 71, wherein said **human** embryonic stem **cells are** ~~cell is~~ transfected with a gene, which **gene** is expressed in the **human** dendritic **cells** ~~cell~~.

85. (Canceled)

86. **(Currently Amended)** The process of **claim 84,** ~~any one of claims 84, 85 or 111,~~ wherein the gene is a reporter gene which expresses a detectable ~~product~~ **protein** in the **human** dendritic **cells** ~~cell~~.

87. **(Currently Amended)** The process of claim 86, wherein the **detectable protein is** ~~gene encodes~~ a fluorescent **protein** ~~product~~.

88. **(Currently Amended)** The process of claim 87, wherein the ~~gene is the GFP gene~~ **fluorescent protein is a green fluorescent protein (GFP)**.

89. **(Currently Amended)** The process of claim 71, wherein the **human embryonic stem cells ares** ~~ES cell is~~ genetically modified so as to inactivate a copy of a gene.

90. **(Currently Amended)** The process of **claim 112** ~~claim 64~~, wherein the recovered ~~immature~~ **human** dendritic **cells are** ~~cell is~~ substantially pure.

91. - 109. (Canceled)

110. **(Currently Amended)** The process according to **claim 70** ~~claim 64~~, wherein said composition further comprises GM-CSF.

111. **(Currently Amended)** The process of claim 84, wherein the gene is under the control of a promoter which **is preferentially active in dendritc cells** ~~upregulates gene expression in the human on maturation of the dendritic cell~~.

112. **(New)** The process according to claim 64, wherein the process further comprises recovering said human dendritic cells from said culture.

113. **(New)** The process of claim 77, wherein the antigen is an autoantigen, a tumour antigen, or a foreign antigen.

114. **(New)** The process of claim 77, wherein the antigen is a tumour antigen.

115. **(New)** A process for producing a culture of mouse dendritic cells, comprising:

culturing mouse embryonic stem cells in the presence of a composition comprising IL-3, wherein said culturing produces mouse dendritic cells.

116. **(New)** The process according to claim 115, wherein the process further comprises recovering said mouse dendritic cells from said culture.

117. **(New)** The process according to claim 115, wherein the composition further comprises GM-CSF.

118. **(New)** The process according to claim 115, wherein the process comprises culturing the mouse embryonic stem cells to form embryoid bodies.

119. **(New)** The process according to claim 115, wherein said mouse embryonic stem cells are genetically modified.

120. **(New)** The process of claim 115, wherein the mouse dendritic cells express one or more heterologous gene(s).

121. **(New)** The process of claim 120, wherein the heterologous gene(s) encodes a cell surface protein.

122. **(New)** The process of claim 120, wherein the heterologous gene(s) encodes an antigen.

123. **(New)** The process of claim 115, wherein the mouse dendritic cells co-express two or more heterologous genes.

124. **(New)** The process of claim 115, wherein one or more endogenous gene(s) has been inactivated in the mouse embryonic stem cells.

125. **(New)** The process of claim 119, wherein said mouse embryonic stem cells are transfected with a gene, which gene is expressed in the mouse dendritic cells.

126. **(New)** The process of claim 125, wherein the gene is under the control of a promoter which is preferentially active in dendritic cells.

127. **(New)** The process of claim 125, wherein the gene is a reporter gene which expresses a detectable gene product in the mouse dendritic cells.

128. **(New)** The process of claim 127, wherein the detectable gene product is a fluorescent protein.

129. **(New)** The process of claim 128, wherein the fluorescent protein is a green fluorescent protein (GFP).

130. **(New)** The process of claim 119, wherein the mouse embryonic stem cells are genetically modified so as to inactivate a copy of a gene.

131. **(New)** The process of claim 115, wherein the recovered dendritic cells are substantially pure.

132. **(New)** The process of claim 115, wherein the mouse embryonic stem cells are derived from CBA/Ca or C57Bl/6.

133. **(New)** The process of claim 115, wherein the mouse embryonic stem cells are from the ESF116 cell line.

134. **(New)** The process of claim 70, wherein the composition further comprises GM-CSF.

135. **(New)** The process of claim 110, wherein the method further comprises recovering said human dendritic cells from said culture.

136. **(New)** A process for producing a culture of human dendritic cells, comprising:

culturing embryoid bodies formed from human embryonic stem cells in the presence of a composition comprising IL-3, wherein said culturing produces human dendritic cells.

137. **(New)** The process of claim 136, wherein the embryoid bodies are adhered to a surface.

138. **(New)** The process of claim136, wherein the composition further comprises GM-CSF.